

IN THE CLAIMS

1. (previously presented) A three-dimensional image-capturing apparatus comprising:
a single solid-state image-sensing device having a plurality of image capturing regions;
and

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a plurality of optical systems for forming images of a subject in the image-capturing regions, each one of the optical systems corresponding to a different one of the image-capturing regions, the optical systems including a plurality of reflection means for reflecting rays from said subject a number of times, and at least a lens provided to be closer to said single solid-state image-sensing device than the closest reflection means to said subject among the reflection means;

wherein the reflection means and the lenses of the optical systems are used to form, in the corresponding image-capturing regions, separate images of said subject which are captured from different viewpoints having a distance therebetween.

2. (previously presented) A three-dimensional image-capturing apparatus comprising:
a single solid-state image-sensing device;

a plurality of imaging-side reflection means having reflectors provided to be obliquely outward, each one of the imaging-side reflection means corresponding to one of a plurality of different portions of an image-capturing region of said single solid-state image-sensing device;

a plurality of subject-side reflection means having reflectors provided outer from the imaging side reflection means so as to be oblique with respect to a subject, each one of the subject-side reflection means corresponding to a different one of the imaging-side reflection means, the subject-side reflection means reflecting rays from said subject to the corresponding imaging-side reflection means;

a plurality of lenses or lens units provided to be closer to said single solid-state image-sensing device than the subject-side reflection means in optical paths formed from said subject to the different portions of the image-capturing region so that rays from said subject to the different portions of the image-capturing region are reflected by the imaging-side reflection means through the lenses or lens units, each one of the lenses or lens units corresponding to a different one of the different portions of the image-capturing region, the lenses or lens units forming a plurality of images of said subject which have parallax; and

a plurality of diaphragms, each one of the diaphragms corresponding to a different one of the lenses or lens units, in which when each optical path has a lens, the diaphragms are provided to be closer to said subject than the corresponding lens and in which when each optical path has a lens unit, the diaphragms are provided to be closer to said subject than a lens of the corresponding lens unit.

3. (previously presented) A three-dimensional image-capturing apparatus according to Claim 1, further comprising a light-shielding means provided at least between the single solid-state image-sensing device and the reflection means so as to separate the optical systems for forming images of said object.

4. (previously presented) A three-dimensional image-capturing apparatus according to Claim 1, further comprising light-limiting means provided to be closer to said subject than the reflection means for the $(2n-1)$ -th reflection (where n represents a positive integer) from said single solid-state image-sensing device along the optical systems, wherein the light-limiting means prevent incidence of flux of ambient light outer from rays forming each image of said subject.

5. (previously presented) A three-dimensional image-capturing apparatus according to Claim 1, further comprising a signal processing means for dividing a video signal from said single solid-state image-sensing device into video signals representing the images of said subject captured in the image-capturing regions for capturing images of said subject from the different viewpoints.

6. (original) A three-dimensional image-capturing apparatus according to Claim 1, wherein parallax which is the distance between the viewpoints is one centimeter or greater.

7. (previously presented) A stereo-camera recording/reproducing systems comprising:
a three-dimensional image-capturing apparatus comprising a single solid-state image-sensing device having a plurality of image-capturing regions and a plurality of optical systems, each one of the optical systems for forming an image of a subject in a different corresponding one of the image-capturing regions;

a timing generator for driving said three-dimensional image-capturing apparatus so as to output the images formed in the image-capturing regions in the form of a single video signal;

a driver;

a camera signal processor for implementing camera signal processing on the single video signal;

a signal recorder for recording, on a single recording medium, the processed video signal output from said camera signal processor;

a single reproducer for reproducing the video signal recorded on the recording medium;

a video separating circuit for separating the reproduced video signal from the reproducer into signals corresponding to the image-capturing regions; and

display apparatus for displaying the signals corresponding to the image-capturing regions, which are output from said video separating circuit;

wherein the optical systems include a plurality of reflection means for reflecting rays from said subject a number of times and at least a lens provided to be closer to said single solid-state image-sensing device than the reflection means closest to said subject, each one of the reflection means corresponding to a different one of the image-capturing regions, and

wherein the reflection means and the lenses are used to form, in the corresponding image-capturing regions, separate images of said subject which are captured from different viewpoints having a distance therebetween.
